

CLAIMS

1. A process for the recovery of an ethylene and propylene containing stream from a cracked gas resulting from cracking a hydrocarbon stream,
5 characterised in that the cracked gas is treated in an absorptive demethanizer with a C₄/C₅ solvent at a temperature between -10 °C and -40 °C to free the cracked gas from methane and hydrogen gas, whereafter the remaining stream is treated by distillation in a distillation unit to obtain a C₄/C₅ containing stream and the ethylene and propylene containing stream; whereafter the
10 C₄/C₅ stream is treated with a hydrogen containing stream in a hydrogenation unit, whereafter a part of the hydrogenated C₄/C₅ stream is cooled to a temperature between -10 °C and -40 °C and recycled to the absorptive demethanizer and a part of the hydrogenated C₄/C₅ stream is separated.
2. A process according to Claim 1 characterised in that the C₄/C₅ stream is
15 hydrogenated with the use of the hydrogen gas coming from the absorptive demethanizer.
3. A process according to any one of Claims 1-2, characterised in that the C₄/C₅ stream is substantially hydrogenated in the hydrogenation unit.
4. A process according to any one of Claims 1-3, characterised in that the C₄/C₅
20 stream is partly hydrogenated in the hydrogenation unit and part of the C₄/C₅ stream is separated after the hydrogenation unit and treated by catalytic cracking, whereafter an additional ethylene and propylene containing stream is obtained.
5. A process according to any one of Claims 1-4, characterised in that from the
25 ethylene and propylene containing stream, being substantially free of hydrogen, acetylenes and dienes, ethylene and propylene are chemically absorbed in a solvent containing a compound derived from a metal of group 10 or 11 of the Periodic Table of the Elements, followed by recovery of ethylene and propylene from said solvent by heating and/or by reducing the
30 pressure.
6. A process according to any one of Claims 1-5, characterised in that the propylene/ethylene ratio in the ethylene and propylene containing stream is higher than 0.55.
7. A process according to Claim 4, characterised in that the propylene/ethylene
35 ratio in the combined ethylene and propylene containing stream is higher than

0.70.

8. A recovery section of a hydrocarbon cracker comprising an absorptive demethanizer, a distillation unit and a hydrogenation unit wherein a process according to any one of Claims 1-2 is applied.
- 5 9. A recovery section according to Claim 8, characterised in that the hydrogenation in the hydrogenation unit takes place with hydrogen gas from the absorptive demethanizer.
10. A method to modify an existing hydrocarbon cracker by providing it with a recovery section according to any one of Claims 8-9.

10